



PTO/SB/21 (09-04)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**TRANSMITTAL
FORM**

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	10/728,153
Filing Date	12/04/2003
First Named Inventor	Alfiero Balzano
Art Unit	3744
Examiner Name	DOERRLER, WILLIAM
Attorney Docket Number	BASIC-004A

ENCLOSURES (Check all that apply)

- | | | |
|--|--|---|
| <input type="checkbox"/> Fee Transmittal Form
<input type="checkbox"/> Fee Attached
<input type="checkbox"/> Amendment/Reply
<input type="checkbox"/> After Final
<input type="checkbox"/> Affidavits/declaration(s)
<input type="checkbox"/> Extension of Time Request
<input type="checkbox"/> Express Abandonment Request
<input type="checkbox"/> Information Disclosure Statement

<input type="checkbox"/> Certified Copy of Priority Document(s)
<input type="checkbox"/> Reply to Missing Parts/
Incomplete Application
<input type="checkbox"/> Reply to Missing Parts
under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)
<input type="checkbox"/> Licensing-related Papers

<input type="checkbox"/> Petition
<input type="checkbox"/> Petition to Convert to a
Provisional Application
<input type="checkbox"/> Power of Attorney, Revocation
Change of Correspondence Address
<input type="checkbox"/> Terminal Disclaimer
<input type="checkbox"/> Request for Refund
<input type="checkbox"/> CD, Number of CD(s) _____
<input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC

<input type="checkbox"/> Appeal Communication to Board
of Appeals and Interferences

<input type="checkbox"/> Appeal Communication to TC
(Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Status Letter
<input checked="" type="checkbox"/> Other Enclosure(s) (please identify
below):
Declaration of Alfiero Balzano under
37 C.F.R. 1.131; Certificate of
Mailing; and Return Receipt Postcard |
|--|--|---|

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	STETINA BRUNDA GARRED & BRUCKER		
Signature			
Printed name	BRUCE B. BRUNDA		
Date	01/04/2008	Reg. No.	28,497

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name	MICHELLE HALL	Date	01/04/2008

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



ATTORNEY DOCKET NO: BASIC-004A
TITLE: SOLID STATE THERMAL APPARATUS

Certificate of Mailing under 37 CFR 1.8 or 37 CFR 1.10

☒ I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

on January 4, 2008


(Signature)

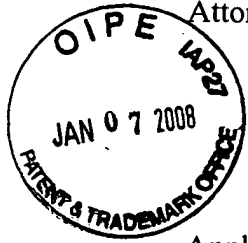
MICHELLE HALL

(Typed name of person signing certificate)

Note: Each paper must have its own certificate of mailing, or this certificate must identify each submitted paper.

1. CERTIFICATE OF MAILING;
2. TRANSMITTAL;
3. Declaration of Alfiero Balzano under 37 C.F.R. 1.131 (includes Exhibits 1-3);
4. RETURN POSTCARD

Application No.: 10/728,153
Attorney Docket: BASIC-004A



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Alfiero Balzano	)	Confirmation No.	6767
)		
Serial No.:	10/728,153	)	Art Unit:	3744
)		
Filed:	12/4/2003	)	Examiner:	William
		)		Charles
		)		Doerrler
For:	SOLID STATE THERMAL)		
	APPARATUS)		

SUBMISSION OF DECLARATION OF ALFIERO BALZANO

UNDER 37 C.F.R § 1.131

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In support of the present application, the applicant hereby submits the accompanying declaration of Alfiero Balzano under 37 C.F.R § 1.131. This declaration is submitted as a supplement to the applicant's response to Office Action filed on December 10, 2007. Subsequently identified documentation was recently obtained from files of the applicant's prior counsel, now deceased.

As set forth in the declaration, the subject invention was in the possession of the inventor prior to the effective date of the newly cited primary reference to Lee, i.e. publication No. 2005/0274119.


Should the examiner have any questions regarding the declaration, or should any outstanding matters remain that would be aided by input from the applicant, the examiner is invited to contact the applicant's representative at the telephone number listed below.

If any additional fee is required, please charge Deposit Account Number 19-4330.

Application No.: 10/728,153
Attorney Docket: BASIC-004A

Respectfully submitted,

Dated: 1/4/08



Bruce B. Brunda, Reg. No. 28,497
STETINA BRUNDA GARRED & GARRED
75 Enterprise, Suite 250
Aliso Viejo, CA 92656
(949) 855-1246

BBB/mch

T:\Client Documents\BASIC\004A\Submission.of.Declaration.doc



Application No.: 10/728,153
Attorney Docket: BASIC-004A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Alfiero Balzano	)	Confirmation No.	6767
)		
Serial No.:	10/728,153	)	Art Unit:	3744
)		
Filed:	12/4/2003	)	Examiner:	William
		)		Charles
		)		Doerrler
For:	SOLID STATE THERMAL)		
	APPARATUS)		

DECLARATION UNDER 37 C.F.R § 1.131

Commissioner for Patents
Alexandria, VA 22313

Dear Sir:

1. I, Alfiero Balzano, do declare and state:
2. I am the sole inventor of claims 1-17 of the above-identified application.
3. It is my understanding that a USPTO Office Action, mailed on June 8, 2007, rejected claims 1-14 of the above-identified application, based in part, under 35 USC § 103(a) as being unpatentable over U.S. Patent Publication No. 2005/0274119 issued to Lee (Hereafter Lee).
4. It is my understanding that the Lee reference has a priority date of July 26, 2002, based upon the filing date of Provisional application No. 60/398,743, to which the Lee reference claims priority from.
5. The drawings and writings attached hereto were prepared by me or under my direct supervision and corroborate that I was in possession of the invention described in the above-identified application, specifically claims 1-17, prior to July 26, 2002.
6. All work and associated drawings and writings were carried out in the United States.

7. Prior to July 26, 2002, I completed my invention as described and claimed in the above-identified application, as evidenced by the following:

- a. Exhibit 1: As shown in the attached drawing, dated April 22, 2002, I prepared a solid state thermal apparatus for dissipating heat from a heat source. More specifically, I prepared a passageway that interfaces with a heat source and carries the heat into the adjacent surface of a convection rectangular tube enclosure where a fan flows air, resulting in an evacuation of the heat through the internal part of the passageway and into the environment. The directional arrows indicate the path the heat is traveled. In addition, I constructed the passageway of graphite composite, this is evidenced by the drawing being titled, "Refrigeration having Graphite Composite," and a label upon the passageway, marked "graphite composite." In addition, there are detailed sketches, as provided in Exhibit 1, of a passageway I prepared having thermal composite sections to reduce temperature rapidly. Furthermore, there is a detailed sketch of a diode I prepared to pass a heat load through to subsequently pump off as ambient air.
- b. Exhibit 2: Exhibit 2, dated April 22, 2002, was written in conjunction with the drawings of Exhibit 1, indicates that I prepared an interface to the high Thermal Conductivity of the Graphite Composite. I layered the Thermal Management Graphite Composite between layers of insulation, and drew out the requisite heat and directed the heat in the direction of a "cooler". I further prepared a composite adhesive for bonding the geometrical package toward the Heat Removal Area. In addition, I cooled a heat sink by utilizing a Thermal Electric Cooling concept, which used dissimilar solid state semiconductor materials to draw heat molecules from one surface to another upon passing an electrical current therethrough. Furthermore, I employed a small fan to pump ambient air through, which resultantly picked up heat and dispersed it into the environment.
- c. Exhibit 3: As shown in a letter, dated May 20, 2002, addressed to Robin Ross, I prepared a solid state thermal apparatus for dissipating heat from a heat source, as described in Exhibits 1 and 2. I further prepared diode

Application No.: 10/728,153
Attorney Docket: BASIC-004A

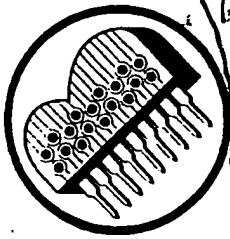
interfaces to remove a small amount of heat from where the heat sources touch it and subsequently conduct the heat to opposite surfaces, thereby pulling heat away from the heat source.

I declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date:

12-21-07

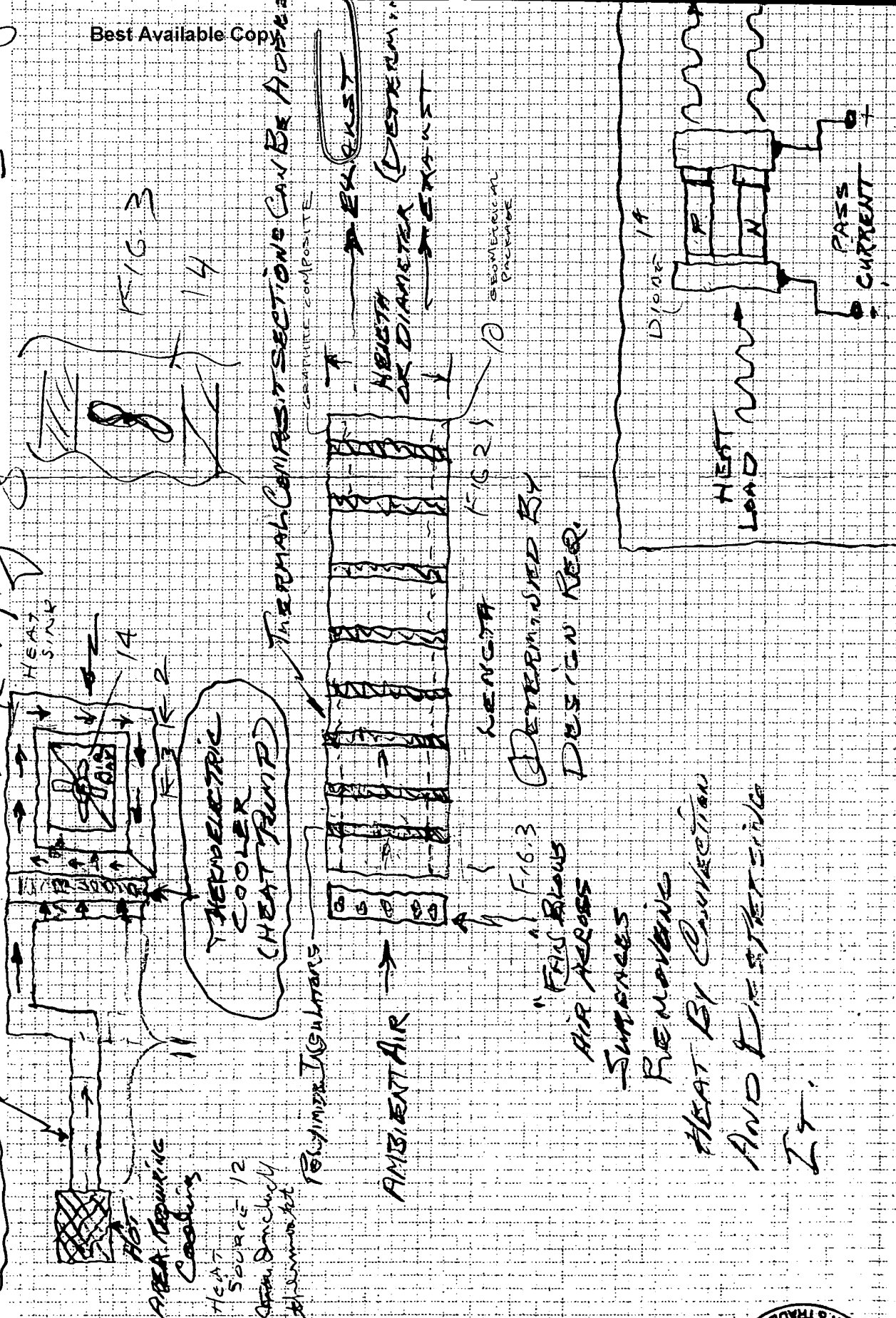

Alfiero Balzano



BASIC ELECTRONICS, INC.

Now 5-6 Times Copper
Thermal Conductance
(Directed & Reverse Currents)

Fig 3 ← 28 Refrigeration Using Liquid



Best Available Copy



the Company

TO REDUCE TEMP.
RAPIDLY



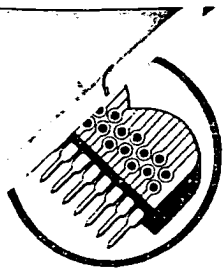
BY DESIGN (REQ.)

Alfano

4-22-02

SEE WHAT'S

PUMPED OFF TO
AMBIENT



BASIC ELECTRONICS, INC.

11371 MONARCH ST.
GARDEN GROVE, CA 92841
714-530-2400 / 714-898-6750
E-MAIL: info@basicinc.com

Thermal Refrigeration Management Innovation

- As a follow on to our new Thermal Management Patent #6,257,329, it was discovered that there was a need for an inter face to the high Thermal Conductivity of the Graphite Composite we had invented, researched proven and had patented.
- The needs include but are not limited to:
 - ❖ Thermal Cooling of High Speed Electronic Data Processors on a continuous basis.
 - ❖ A new concept for regulated low cost, low energy, refrigeration of food storage.
 - ❖ A new concept for regulated low cost, low energy refrigeration of our living environment.
 - ❖ A new concept for regulated subzero cauterization in Surgical Tools which are safe, very effective, and small.
 - ❖ A new concept for regulated cooling of industrial tools, where liquid cooling is unsafe, such as oil drilling etc, etc.

In fulfilling same I have found that the Graphite in Patent #6,257,329 Conducts 5 to 6 times the heat and that it is Directional.

By layering the Thermal Management Graphite Composite between layers of insulation (if desired), I draw out the heat, we want to remove, in the direction of a "cooler". I have identified and tested a composite adhesive for bonding the geometrical package, which has the same high Thermal Conductivity of the graphite which is carrying the heat, toward the Thermal cold Heat Sinking or Heat Removal Area.

11

The Heat we want to remove has a natural tendency to directionally flow to the cold source and since the composite in directional the heat does not want to return to it's source.

12

13

Cooling a sink can be accomplished using gas or liquid as is accomplished in our present day refrigeration. I have innovated this concept by applying and using Thermal Electric Cooling concept, sometimes called the Peltier Effect which makes use of a concept of using dissimilar solid state semiconductor materials which draw heat molecules from one surface to the other when electrical current is passed through it.

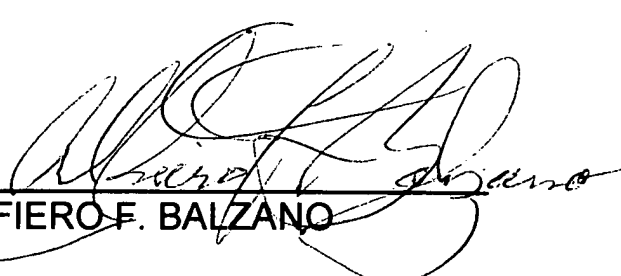
Quartz

Although individually very small, it is magnified by the quantity of semiconductors required to fulfill the requirement.

(100 - 200 - 300 - 400 - 500 - 600 - 700 - 800 - 900 - 1000 - 1100 - 1200 - 1300 - 1400 - 1500 - 1600 - 1700 - 1800 - 1900 - 2000 - 2100 - 2200 - 2300 - 2400 - 2500 - 2600 - 2700 - 2800 - 2900 - 3000 - 3100 - 3200 - 3300 - 3400 - 3500 - 3600 - 3700 - 3800 - 3900 - 4000 - 4100 - 4200 - 4300 - 4400 - 4500 - 4600 - 4700 - 4800 - 4900 - 5000 - 5100 - 5200 - 5300 - 5400 - 5500 - 5600 - 5700 - 5800 - 5900 - 6000 - 6100 - 6200 - 6300 - 6400 - 6500 - 6600 - 6700 - 6800 - 6900 - 7000 - 7100 - 7200 - 7300 - 7400 - 7500 - 7600 - 7700 - 7800 - 7900 - 8000 - 8100 - 8200 - 8300 - 8400 - 8500 - 8600 - 8700 - 8800 - 8900 - 9000 - 9100 - 9200 - 9300 - 9400 - 9500 - 9600 - 9700 - 9800 - 9900 - 10000 - 10100 - 10200 - 10300 - 10400 - 10500 - 10600 - 10700 - 10800 - 10900 - 11000 - 11100 - 11200 - 11300 - 11400 - 11500 - 11600 - 11700 - 11800 - 11900 - 12000 - 12100 - 12200 - 12300 - 12400 - 12500 - 12600 - 12700 - 12800 - 12900 - 13000 - 13100 - 13200 - 13300 - 13400 - 13500 - 13600 - 13700 - 13800 - 13900 - 14000 - 14100 - 14200 - 14300 - 14400 - 14500 - 14600 - 14700 - 14800 - 14900 - 15000 - 15100 - 15200 - 15300 - 15400 - 15500 - 15600 - 15700 - 15800 - 15900 - 16000 - 16100 - 16200 - 16300 - 16400 - 16500 - 16600 - 16700 - 16800 - 16900 - 17000 - 17100 - 17200 - 17300 - 17400 - 17500 - 17600 - 17700 - 17800 - 17900 - 18000 - 18100 - 18200 - 18300 - 18400 - 18500 - 18600 - 18700 - 18800 - 18900 - 19000 - 19100 - 19200 - 19300 - 19400 - 19500 - 19600 - 19700 - 19800 - 19900 - 20000 - 20100 - 20200 - 20300 - 20400 - 20500 - 20600 - 20700 - 20800 - 20900 - 21000 - 21100 - 21200 - 21300 - 21400 - 21500 - 21600 - 21700 - 21800 - 21900 - 22000 - 22100 - 22200 - 22300 - 22400 - 22500 - 22600 - 22700 - 22800 - 22900 - 23000 - 23100 - 23200 - 23300 - 23400 - 23500 - 23600 - 23700 - 23800 - 23900 - 24000 - 24100 - 24200 - 24300 - 24400 - 24500 - 24600 - 24700 - 24800 - 24900 - 25000 - 25100 - 25200 - 25300 - 25400 - 25500 - 25600 - 25700 - 25800 - 25900 - 26000 - 26100 - 26200 - 26300 - 26400 - 26500 - 26600 - 26700 - 26800 - 26900 - 27000 - 27100 - 27200 - 27300 - 27400 - 27500 - 27600 - 27700 - 27800 - 27900 - 28000 - 28100 - 28200 - 28300 - 28400 - 28500 - 28600 - 28700 - 28800 - 28900 - 29000 - 29100 - 29200 - 29300 - 29400 - 29500 - 29600 - 29700 - 29800 - 29900 - 30000 - 30100 - 30200 - 30300 - 30400 - 30500 - 30600 - 30700 - 30800 - 30900 - 31000 - 31100 - 31200 - 31300 - 31400 - 31500 - 31600 - 31700 - 31800 - 31900 - 32000 - 32100 - 32200 - 32300 - 32400 - 32500 - 32600 - 32700 - 32800 - 32900 - 33000 - 33100 - 33200 - 33300 - 33400 - 33500 - 33600 - 33700 - 33800 - 33900 - 34000 - 34100 - 34200 - 34300 - 34400 - 34500 - 34600 - 34700 - 34800 - 34900 - 35000 - 35100 - 35200 - 35300 - 35400 - 35500 - 35600 - 35700 - 35800 - 35900 - 36000 - 36100 - 36200 - 36300 - 36400 - 36500 - 36600 - 36700 - 36800 - 36900 - 37000 - 37100 - 37200 - 37300 - 37400 - 37500 - 37600 - 37700 - 37800 - 37900 - 38000 - 38100 - 38200 - 38300 - 38400 - 38500 - 38600 - 38700 - 38800 - 38900 - 39000 - 39100 - 39200 - 39300 - 39400 - 39500 - 39600 - 39700 - 39800 - 39900 - 40000 - 40100 - 40200 - 40300 - 40400 - 40500 - 40600 - 40700 - 40800 - 40900 - 41000 - 41100 - 41200 - 41300 - 41400 - 41500 - 41600 - 41700 - 41800 - 41900 - 42000 - 42100 - 42200 - 42300 - 42400 - 42500 - 42600 - 42700 - 42800 - 42900 - 43000 - 43100 - 43200 - 43300 - 43400 - 43500 - 43600 - 43700 - 43800 - 43900 - 44000 - 44100 - 44200 - 44300 - 44400 - 44500 - 44600 - 44700 - 44800 - 44900 - 45000 - 45100 - 45200 - 45300 - 45400 - 45500 - 45600 - 45700 - 45800 - 45900 - 46000 - 46100 - 46200 - 46300 - 46400 - 46500 - 46600 - 46700 - 46800 - 46900 - 47000 - 47100 - 47200 - 47300 - 47400 - 47500 - 47600 - 47700 - 47800 - 47900 - 48000 - 48100 - 48200 - 48300 - 48400 - 48500 - 48600 - 48700 - 48800 - 48900 - 49000 - 49100 - 49200 - 49300 - 49400 - 49500 - 49600 - 49700 - 49800 - 49900 - 50000 - 50100 - 50200 - 50300 - 50400 - 50500 - 50600 - 50700 - 50800 - 50900 - 51000 - 51100 - 51200 - 51300 - 51400 - 51500 - 51600 - 51700 - 51800 - 51900 - 52000 - 52100 - 52200 - 52300 - 52400 - 52500 - 52600 - 52700 - 52800 - 52900 - 53000 - 53100 - 53200 - 53300 - 53400 - 53500 - 53600 - 53700 - 53800 - 53900 - 54000 - 54100 - 54200 - 54300 - 54400 - 54500 - 54600 - 54700 - 54800 - 54900 - 55000 - 55100 - 55200 - 55300 - 55400 - 55500 - 55600 - 55700 - 55800 - 55900 - 56000 - 56100 - 56200 - 56300 - 56400 - 56500 - 56600 - 56700 - 56800 - 56900 - 57000 - 57100 - 57200 - 57300 - 57400 - 57500 - 57600 - 57700 - 57800 - 57900 - 58000 - 58100 - 58200 - 58300 - 58400 - 58500 - 58600 - 58700 - 58800 - 58900 - 59000 - 59100 - 59200 - 59300 - 59400 - 59500 - 59600 - 59700 - 59800 - 59900 - 60000 - 60100 - 60200 - 60300 - 60400 - 60500 - 60600 - 60700 - 60800 - 60900 - 61000 - 61100 - 61200 - 61300 - 61400 - 61500 - 61600 - 61700 - 61800 - 61900 - 62000 - 62100 - 62200 - 62300 - 62400 - 62500 - 62600 - 62700 - 62800 - 62900 - 63000 - 63100 - 63200 - 63300 - 63400 - 63500 - 63600 - 63700 - 63800 - 63900 - 64000 - 64100 - 64200 - 64300 - 64400 - 64500 - 64600 - 64700 - 64800 - 64900 - 65000 - 65100 - 65200 - 65300 - 65400 - 65500 - 65600 - 65700 - 65800 - 65900 - 66000 - 66100 - 66200 - 66300 - 66400 - 66500 - 66600 - 66700 - 66800 - 66900 - 67000 - 67100 - 67200 - 67300 - 67400 - 67500 - 67600 - 67700 - 67800 - 67900 - 68000 - 68100 - 68200 - 68300 - 68400 - 68500 - 68600 - 68700 - 68800 - 68900 - 69000 - 69100 - 69200 - 69300 - 69400 - 69500 - 69600 - 69700 - 69800 - 69900 - 70000 - 70100 - 70200 - 70300 - 70400 - 70500 - 70600 - 70700 - 70800 - 70900 - 71000 - 71100 - 71200 - 71300 - 71400 - 71500 - 71600 - 71700 - 71800 - 71900 - 72000 - 72100 - 72200 - 72300 - 72400 - 72500 - 72600 - 72700 - 72800 - 72900 - 73000 - 73100 - 73200 - 73300 - 73400 - 73500 - 73600 - 73700 - 73800 - 73900 - 74000 - 74100 - 74200 - 74300 - 74400 - 74500 - 74600 - 74700 - 74800 - 74900 - 75000 - 75100 - 75200 - 75300 - 75400 - 75500 - 75600 - 75700 - 75800 - 75900 - 76000 - 76100 - 76200 - 76300 - 76400 - 76500 - 76600 - 76700 - 76800 - 76900 - 77000 - 77100 - 77200 - 77300 - 77400 - 77500 - 77600 - 77700 - 77800 - 77900 - 78000 - 78100 - 78200 - 78300 - 78400 - 78500 - 78600 - 78700 - 78800 - 78900 - 79000 - 79100 - 79200 - 79300 - 79400 - 79500 - 79600 - 79700 - 79800 - 79900 - 80000 - 80100 - 80200 - 80300 - 80400 - 80500 - 80600 - 80700 - 80800 - 80900 - 81000 - 81100 - 81200 - 81300 - 81400 - 81500 - 81600 - 81700 - 81800 - 81900 - 82000 - 82100 - 82200 - 82300 - 82400 - 82500 - 82600 - 82700 - 82800 - 82900 - 83000 - 83100 - 83200 - 83300 - 83400 - 83500 - 83600 - 83700 - 83800 - 83900 - 84000 - 84100 - 84200 - 84300 - 84400 - 84500 - 84600 - 84700 - 84800 - 84900 - 85000 - 85100 - 85200 - 85300 - 85400 - 85500 - 85600 - 85700 - 85800 - 85900 - 86000 - 86100 - 86200 - 86300 - 86400 - 86500 - 86600 - 86700 - 86800 - 86900 - 87000 - 87100 - 87200 - 87300 - 87400 - 87500 - 87600 - 87700 - 87800 - 87900 - 88000 - 88100 - 88200 - 88300 - 88400 - 88500 - 88600 - 88700 - 88800 - 88900 - 89000 - 89100 - 89200 - 89300 - 89400 - 89500 - 89600 - 89700 - 89800 - 89900 - 90000 - 90100 - 90200 - 90300 - 90400 - 90500 - 90600 - 90700 - 90800 - 90900 - 91000 - 91100 - 91200 - 91300 - 91400 - 91500 - 91600 - 91700 - 91800 - 91900 - 92000 - 92100 - 92200 - 92300 - 92400 - 92500 - 92600 - 92700 - 92800 - 92900 - 93000 - 93100 - 93200 - 93300 - 93400 - 93500 - 93600 - 93700 - 93800 - 93900 - 94000 - 94100 - 94200 - 94300 - 94400 - 94500 - 94600 - 94700 - 94800 - 94900 - 95000 - 95100 - 95200 - 95300 - 95400 - 95500 - 95600 - 95700 - 95800 - 95900 - 96000 - 96100 - 96200 - 96300 - 96400 - 96500 - 96600 - 96700 - 96800 - 96900 - 97000 - 97100 - 97200 - 97300 - 97400 - 97500 - 97600 - 97700 - 97800 - 97900 - 98000 - 98100 - 98200 - 98300 - 98400 - 98500 - 98600 - 98700 - 98800 - 98900 - 99000 - 99100 - 99200 - 99300 - 99400 - 99500 - 99600 - 99700 - 99800 - 99900 - 100000 - 100100 - 100200 - 100300 - 100400 - 100500 - 100600 - 100700 - 100800 - 100900 - 101000 - 101100 - 101200 - 101300 - 101400 - 101500 - 101600 - 101700 - 101800 - 101900 - 102000 - 102100 - 102200 - 102300 - 102400 - 102500 - 102600 - 102700 - 102800 - 102900 - 103000 - 103100 - 103200 - 103300 - 103400 - 103500 - 103600 - 103700 - 103800 - 103900 - 104000 - 104100 - 104200 - 104300 - 104400 - 104500 - 104600 - 104700 - 104800 - 104900 - 105000 - 105100 - 105200 - 105300 - 105400 - 105500 - 105600 - 105700 - 105800 - 105900 - 106000 - 106100 - 106200 - 106300 - 106400 - 106500 - 106600 - 106700 - 106800 - 106900 - 107000 - 107100 - 107200 - 107300 - 107400 - 107500 - 107600 - 107700 - 107800 - 107900 - 108000 - 108100 - 108200 - 108300 - 108400 - 108500 - 108600 - 108700 - 108800 - 108900 - 109000 - 109100 - 109200 - 109300 - 109400 - 109500 - 109600 - 109700 - 109800 - 109900 - 110000 - 110100 - 110200 - 110300 - 110400 - 110500 - 110600 - 110700 - 110800 - 110900 - 111000 - 111100 - 111200 - 111300 - 111400 - 111500 - 111600 - 111700 - 111800 - 111900 - 112000 - 112100 - 112200 - 112300 - 112400 - 112500 - 112600 - 112700 - 112800 - 112900 - 113000 - 113100 - 113200 - 113300 - 113400 - 113500 - 113600 - 113700 - 113800 - 113900 - 114000 - 114100 - 114200 - 114300 - 114400 - 114500 - 114600 - 114700 - 114800 - 114900 - 115000 - 115100 - 115200 - 115300 - 115400 - 115500 - 115600 - 115700 - 115800 - 115900 - 116000 - 116100 - 116200 - 116300 - 116400 - 116500 - 116600 - 116700 - 116800 - 116900 - 117000 - 117100 - 117200 - 117300 - 117400 - 117500 - 117600 - 117700 - 117800 - 117900 - 118000 - 118100 - 118200 - 118300 - 118400 - 118500 - 118600 - 118700 - 118800 - 118900 - 119000 - 119100 - 119200 - 119300 - 119400 - 119500 - 119600 - 119700 - 119800 - 119900 - 120000 - 120100 - 120200 - 120300 - 120400 - 120500 - 120600 - 120700 - 120800 - 120900 - 121000 - 121100 - 121200 - 121300 - 121400 - 121500 - 121600 - 121700 - 121800 - 121900 - 122000 - 122100 - 122200 - 122300 - 122400 - 122500 - 122600 - 122700 - 122800 - 122900 - 123000 - 123100 - 123200 - 123300 - 123400 - 123500 - 123600 - 123700 - 123800 - 123900 - 124000 - 124100 - 124200 - 124300 - 124400 - 124500 - 124600 - 124700 - 124800 - 124900 - 125000 - 125100 - 125200 - 125300 - 125400 - 125500 - 125600 - 125700 - 125800 - 125900 - 126000 - 126100 - 126200 - 126300 - 126400 - 126500 - 126600 - 126700 - 126800 - 126900 - 127000 - 127100 - 127200 - 127300 - 127400 - 127500 - 127600 - 127700 - 127800 - 127900 - 128000 - 128100 - 128200 - 128300 - 128400 - 128500 - 128600 - 128700 - 128800 - 128900 - 129000 - 129100 - 129200 - 129300 - 129400 - 129500 - 129600 - 129700 - 129800 - 129900 - 130000 - 130100 - 130200 - 130300 - 130400 - 130500 - 130600 - 130700 - 130800 - 130900 - 131000 - 131100 - 131200 - 131300 - 131400 - 131500 - 131600 - 131700 - 131800 - 131900 - 132000 - 132100 - 132200 - 132300 - 132400 - 132500 - 132600 - 132700 - 132800 - 132900 - 133000 - 133100 - 133200 - 133300 - 133400 - 133500 - 133600 - 133700 - 133800 - 133900 - 134000 - 134100 - 134200 - 134300 - 134400 - 134500 - 134600 - 134700 - 134800 - 134900 - 135000 - 135100 - 135200 - 135300 - 135400 - 135500 - 135600 - 135700 - 135800 - 135900 - 136000 - 136100 - 136200 - 136300 - 136400 - 136500 - 136600 - 136700 - 136800 - 136900 - 137000 - 137100 - 137200 - 137300 - 137400 - 137500 - 137600 - 137700 - 137800 - 137900 - 138000 - 138100 - 138200 - 138300 - 138400 - 138500 - 138600 - 138700 - 138800 - 138900 - 139000 - 139100 - 139200 - 139300 - 139400 - 139500 - 139600 - 139700 - 139800 - 139900 - 140000 - 140100 - 140200 - 140300 - 140400 - 140500 - 140600 - 140700 - 140800 - 140900 - 141000 - 141100 - 141200 - 141300 - 141400 - 141500 - 141600 - 141700 - 141800 - 141900 - 142000 - 142100 - 142200 - 142300 - 142400 - 142500 - 142600 - 142700 - 142800 - 142900 - 143000 - 143100 - 143200 - 143300 - 143400 - 143500 - 143600 - 143700 - 143800 - 143900 - 144000 - 144100 - 144200 - 144300 - 144400 - 144500 - 144600 - 144700 - 144800 - 144900 - 145000 - 145100 - 145200 - 145300 - 145400 - 145500 - 145600 - 145700 - 145800 - 145900 - 146000 - 146100 - 146200 - 146300 - 146400 - 146500 - 146600 - 146700 - 146800 - 146900 - 147000 - 147100 - 147200 - 147300 - 147400 - 147500 - 147600 - 147700 - 147800 - 147900 - 148000 - 148100 - 148200 - 148300 - 148400 - 148500 - 148600 - 148700 - 148800 - 148900 - 149000 - 149100 - 149200 - 149300 - 149400 - 149500 - 149600 - 149700 - 149800 - 149900 - 150000 - 150100 - 150200 - 150300 - 150400 - 150500 - 150600 - 150700 - 150800 - 150900 - 151000 - 151100 - 151200 - 151300 - 151400 - 151500 - 151600 - 151700 - 151800 - 151900 - 152000 - 152100 - 152200 - 152300 - 152400 - 152500 - 152600 - 152700 - 152800 - 152900 - 153000 - 153100 - 153200 - 153300 - 153400 - 153500 - 153600 - 153700 - 153800 - 153900 - 154000 - 154100 - 154200 - 154300 - 154400 - 154500 - 154600 - 154700 - 154800 - 154900 - 155000 - 155100 - 155200 - 155300 - 155400 - 155500 - 155600 - 155700 - 155800 - 155900 - 156000 - 156100 - 156200 - 156300 - 156400 - 156500 - 156600 - 156700 - 156800 - 156900 - 157000 - 157100 - 157200 - 157300 - 157400 - 157500 - 157600 - 157700 - 157800 - 157900 - 158000 - 158100 - 158200 - 158300 - 158400 - 158500 - 158600 - 158700 - 158800 - 158900 - 159000 - 159100 - 159200 - 159300 - 159400 - 159500 - 159600 - 159700 - 159800 - 159900 - 160000 - 160100 - 160200 - 160300 - 160400 - 160500 - 160600 - 160700 - 160800 - 160900 - 161000 - 161100 - 161200 - 161300 - 161400 - 161500 - 161600 - 161700 - 161800 - 161900 - 162000 - 162100 - 162200 - 16

This results in continuous stream of heat from the heat source, at a very high rate, due to graphite composite. It is also pumped away by the electron flow of the Thermal electric cooling substrate, where it is removed by a low cost convection means, such as the simple controlled movement of air from ambient through the Directional Thermally Conductive Package and exhausted into the environment without harm.

I believe this to be an addition to the innovation of our Thermal Management Graphite Composite Patent.



ALFIERO F. BALZANO

4-22-02

DATE

May 20, 2002

TO: Robin Ross

RE: Changes

Accordingly, the above problems and difficulties are avoided by this new invention, which provides for an interface to the Thermal Management System, which is the subject of U.S. Patent #6,257,329.

The Thermal Management System of U.S. Patent #6,257,329 *conductor* conducts heat at five to six times the rate of copper. In this new invention, a coil or other encompassing structure consisting of the graphite composite material from the Thermal Management System patent above interfaces to the heat source and carries the heat molecules away to one side of the Thermal Electric Solid State semiconductor substrate which when energized pumps heat into the adjacent surface of the convection rectangular tube enclosure where the fan flows air which evacuates the heat through the internal part of this same tube and into the environment. To expand the same graphite material creates the diode interface from the heat source to the rectangular tube containing the fan on one end. Each diode removes a small amount of heat from where the heat source touches it and conducts it to its opposite surface, thereby pulling heat away from the heat source. The graphite material is thermally directional allowing the heat being brought to the rectangular tube to swirl in a circular pattern in the rectangular tube where it is swept away through the internal part of the tube by the air being pushed through by the fan.

Therefore, the new invention is solid-state, eliminating the need for Freon, Ammonia, or other gas presently used in conventional refrigeration. Additionally, the high cost of pumping refrigerant through a compressor, and the use of a compressor, is eliminated in the new invention. The new invention is extremely light because the heavy weight of the copper used in conventional refrigeration and compressor are no longer present. Additionally, significantly lower current is needed to power the present invention (110 volts @ 10-15 amps for conventional refrigeration compared to

12 volts @ 100-200 MA for the present invention). Finally, the present invention is finitely controllable in that we can regulate the power to the thermal semiconductor interface, in combination with the fan which can be also finitely regulated by the amount of power provided it, the delta defined by the thermal control setting, controlled by the user of this new refrigeration invention.

DM'